

CLAIMS

1. Vacuum heat insulating material comprising a core material containing inorganic fibers and an exterior covering material having gas barrier performance, the vacuum heat insulating material being provided by depressurizing interior of the exterior covering material, wherein:
 - the inorganic fibers include silicon oxide as a main component; and
 - the core material has intersecting points at which the fibers are adhered to one another via intermolecular interaction.
2. The vacuum heat insulating material according to claim 1, wherein the intermolecular interaction is Si-OH group hydrogen bonding at a surface of the fibers.
3. The vacuum heat insulating material according to claim 2, wherein Si-OH/Si-O ratio of the surface of the fibers is equal to or higher than 0.1 and equal to or lower than 1.0.
4. The vacuum heat insulating material according to any one of claims 1 to 3, wherein the core material has density equal to or higher than 150kg/m^3 and equal to or lower than 300kg/m^3 .
5. The vacuum heat insulating material according to any one of claims 1 to 3, wherein the core material has bending strength equal to or higher than 0.03 MPa and equal to or lower than 0.10 MPa.
6. The vacuum heat insulating material according to claim 3, wherein Si-OH

groups are introduced to the surface of the fibers by contact between the surface of the fibers and water molecules.

7. A refrigeration equipment having a refrigerating box at least including a vacuum heat insulating material, wherein:

the vacuum heat insulating material comprises a core material containing inorganic fibers and an exterior covering material having gas barrier performance in which interior of the exterior covering material is depressurized,

- the inorganic fibers include silicon oxide as a main component, and intersecting points at which the fibers are adhered each other by intermolecular interaction are formed.

8. The refrigeration equipment according to claim 7, wherein the refrigeration equipment is a refrigerator/freezer that uses the vacuum heat insulating material at least for heat insulation of a freezing compartment.

9. The refrigeration equipment according to claim 7, wherein the intermolecular interaction is Si-OH group hydrogen bonding at a surface of the fibers.

10. The refrigeration equipment according to claim 9, wherein Si-OH/Si-O ratio of the surface of the fibers is equal to or higher than 0.1 and equal to or lower than 1.0.